

**REMARKS**

If a petition for an extension of time is required to make this preliminary amendment timely, this paper should be considered to be such a petition, and the Commissioner is authorized to charge the requisite fees to our Deposit Account No. 03-3125. The Office is hereby authorized to charge any additional fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a further telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Entry of this amendment and allowance of this application are respectfully requested.

Respectfully submitted,



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**Exhibit A**

**In the Specification:**

**On page 25 and 26, paragraph 3:**

FIG. 19 illustrates an RZ signal generator 1900 in accordance with a preferred embodiment comprising a semiconductor substrate 1904 upon which is integrated a CW laser 1902, a first PM 1906, an MZI 1908, a second PM 1910, and electrical circuitry 1912 for driving the optical components. RZ signal generator 1900 further comprises a variable optical amplifier or attenuator (VOA) 1907 positioned to receive the output of PM 1906, and to provide an amplified or attenuated version of the optical signal to the MZI 1908. The VOA 1907 may provide loss recovery and/or signal equalization functionalities. By integrating the VOA 1907 onto the same chip as the other components in accordance with the preferred embodiments, a single-chip device may provide optical generation, modulation, and equalization of an optical channel that may then be combined with other optical channels into a WDM optical signal. The equalization function, of course, will require external monitoring of all WDM channels and external provision of an equalization control signal to the VOA 1907. According to a preferred embodiment, the VOA 1907 may comprise a semiconductor optical amplifier (SOA) having multiple transverse cavities for exciting the gain medium thereof, as described in U.S. Patent Application Ser. No. [ ] 09/972,146, entitled "SEMICONDUCTOR OPTICAL AMPLIFIER WITH TRANSVERSE LASER CAVITY INTERSECTING OPTICAL SIGNAL PATH AND METHOD OF FABRICATION THEREOF," [Attorney Docket No. 0980/65847,] filed on the same day as this application, which is incorporated by reference herein. Advantageously, such transversely excited SOA device may be operated in either an amplification mode or an attenuation mode, thereby increasing the versatility of the RZ signal generator 1900. Alternatively, the VOA 1907 may comprise an evanescently excited SOA in which the gain medium of the SOA is evanescently excited by a nearby lasing field. In still another preferred embodiment, the VOA 1907 may be provided in the form of a tunable coupler, in which case only attenuation/equalization functionality would be provided by the VOA 1907.

**Exhibit B**

**In the Specification:**

**On page 25 and 26, paragraph 3:**

FIG. 19 illustrates an RZ signal generator 1900 in accordance with a preferred embodiment comprising a semiconductor substrate 1904 upon which is integrated a CW laser 1902, a first PM 1906, an MZI 1908, a second PM 1910, and electrical circuitry 1912 for driving the optical components. RZ signal generator 1900 further comprises a variable optical amplifier or attenuator (VOA) 1907 positioned to receive the output of PM 1906, and to provide an amplified or attenuated version of the optical signal to the MZI 1908. The VOA 1907 may provide loss recovery and/or signal equalization functionalities. By integrating the VOA 1907 onto the same chip as the other components in accordance with the preferred embodiments, a single-chip device may provide optical generation, modulation, and equalization of an optical channel that may then be combined with other optical channels into a WDM optical signal. The equalization function, of course, will require external monitoring of all WDM channels and external provision of an equalization control signal to the VOA 1907. According to a preferred embodiment, the VOA 1907 may comprise a semiconductor optical amplifier (SOA) having multiple transverse cavities for exciting the gain medium thereof, as described in U.S. Patent Application Ser. No. 09/972,146, entitled "SEMICONDUCTOR OPTICAL AMPLIFIER WITH TRANSVERSE LASER CAVITY INTERSECTING OPTICAL SIGNAL PATH AND METHOD OF FABRICATION THEREOF," filed on the same day as this application, which is incorporated by reference herein. Advantageously, such transversely excited SOA device may be operated in either an amplification mode or an attenuation mode, thereby increasing the versatility of the RZ signal generator 1900. Alternatively, the VOA 1907 may comprise an evanescently excited SOA in which the gain medium of the SOA is evanescently excited by a nearby lasing field. In still another preferred embodiment, the VOA 1907 may be provided in the form of a tunable coupler, in which case only attenuation/equalization functionality would be provided by the VOA 1907.